Supplementary file for: Eidesen P.B., Müller E., Lettner C., Alsos I.G., Bender M., Kristiansen M., Peeters B., Postma F. & Verweij K.F. 2013. Tetraploids do not form cushions: association of ploidy level, growth form and ecology in the High Arctic *Saxifraga oppositifolia* L. s. lat. (Saxifragaceae) in Svalbard. *Polar Research 32*. Correspondence: Pernille Bronken Eidesen, University Centre in Svalbard, P.O. Box 156, NO-9171 Longyearbyen, Svalbard, Norway. E-mail: pernillee@unis.no.

Supplementary Table S1. Result of the fitting of environmental factors to non-metric multidimensional scaling (NMDS) based on 148 vegetation plots analysed near samples of *Saxifraga oppositifolia*, excluding plots with triploids, plots without vascular plant cover and the plots from Wijdefjorden (Location 5; Table 1). Significance values are based on 1000 permutations.

Environmental variables		NMDS2	r2	Pr(>r)
soil pH	0.780	0.625	0.186	0.001
soil temperature	1.000	-0.004	0.251	0.001
loss on ignition	-0.834	-0.552	0.217	0.001
conductivity	-0.237	0.971	0.158	0.002
soil moisture	-0.648	-0.762	0.040	0.060
bryophyte cover	-0.883	0.470	0.168	0.001
lichen cover	-0.328	-0.945	0.241	0.001
coverage of litter	0.945	0.326	0.088	0.001
vascular plant cover	0.226	0.974	0.117	0.001
bare ground	-0.995	0.099	0.047	0.038
Soil biological crust	0.584	-0.812	0.142	0.001
	nental variables soil pH soil temperature loss on ignition conductivity soil moisture bryophyte cover lichen cover coverage of litter vascular plant cover bare ground Soil biological crust	hental variablesNMDS1soil pH0.780soil temperature1.000loss on ignition-0.834conductivity-0.237soil moisture-0.648bryophyte cover-0.883lichen cover-0.328coverage of litter0.945vascular plant cover0.226bare ground-0.995Soil biological crust0.584	nental variables NMDS1 NMDS2 soil pH 0.780 0.625 soil temperature 1.000 -0.004 loss on ignition -0.834 -0.552 conductivity -0.237 0.971 soil moisture -0.648 -0.762 bryophyte cover -0.883 0.470 lichen cover -0.328 -0.945 coverage of litter 0.945 0.326 vascular plant cover 0.226 0.974 bare ground -0.995 0.099 Soil biological crust 0.584 -0.812	nental variables NMDS1 NMDS2 r2 soil pH 0.780 0.625 0.186 soil temperature 1.000 -0.004 0.251 loss on ignition -0.834 -0.552 0.217 conductivity -0.237 0.971 0.158 soil moisture -0.648 -0.762 0.040 bryophyte cover -0.883 0.470 0.168 lichen cover -0.328 -0.945 0.241 coverage of litter 0.945 0.326 0.088 vascular plant cover 0.226 0.974 0.117 bare ground -0.995 0.099 0.047

Supplementary Table S2. Test results of the Wilcoxson rank sum test (ploidy) and Kruskal-Wallis rank sum test (growth form) showing the presence (p) or absence (a) of significant differences in environmental factors in 163 plots were *Saxifraga oppositifolia* individuals with different ploidy levels and growth forms were sampled (six plots with triploids discarded).

						Cover					
			Loss								Soil
Environmental	Soil	Soil	on	Conduct-	Soil				Vascular	Bare	biological
variables	рН	temperature	ignition	ivity	moisture	Bryophytes	Lichens	Litter	plants	ground	crust
Ploidy	р	р	а	a	а	a	р	а	р	р	а
Growth form	р	р	a	а	a	a	р	р	р	р	а

Supplementary Table S3. Correlation of environmental factors associated with 163 vegetation plots tested with correlation tests after Spearman (6 plots with triploids discarded), Rs values are given, significance codes: 0 '***' 0.001 '*' 0.01 '*' 0.05.

						Cover					
Environmental variables		Soil	Losson	Conduct-	Soil				Vascular	Bare	Soil
variables	Soil pH	temperature	ignition	ivity	moisture	Bryophytes	Lichens	Litter	plants	ground	crust
Soil pH	-										
Soil temperature	-0.146	-									
Loss on ignition	-0.498***	0.403***	-								
Conductivity	0.253***	-0.295***	0.197*								
Soil moisture	-0.260**	-0.041	0.490***	0.239**	-						
Bryophytes	-0.328***	-0.258***	0.185*	0.184*	0.421***	-					
Lichens	-0.586***	-0.040	0.372***	-0.211**	0.295***	0.124	-				
Litter	-0.140	0.319***	0.479***	0.284***	0.246**	-0.004	-0.057	-			
Vascular plants	0.067	0.245**	0.269***	0.276***	0.297***	0.154*	-0.298***	0.276***	-		
Bare ground	0.178*	-0.355***	-0.432***	-0.215**	-0.493***	-0.198**	-0.007	-0.473***	-0.546***	-	
Soil biological crust	-0.028	0.560***	0.214**	-0.204**	-0.023	-0.370***	0.092	0.001	-0.090	-0.218**	-